DOCUMENT RESUME

ED 077 101 EA 005 001

AUTHOR Mazzoni, Tim L., Jr.; Campbell, Roald F.
TITLE State Governmental Structure and Education Policy Decisions: A Statistical Exploration.
PUB DATE 1 Mar 73
NOTE 41p.; Paper presented at American Educational Research Association Annual Meeting (58th, New Orleans, Louisiana, February 25-March 1, 1973)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Correlation; Educational Finance; *Educaticnal Policy; Environmental Influences; Models; *Organization; *Policy Formation; Political Influences; Socioeconomic Influences; Speeches; State Departments of Education; *State Government; *Statistical Analysis; Tables (Data)

ABSTRACT

The objective of this study was to explore, by means of the correlational analysis of aggregate data, the relationships between State governmental structure and education policies. More than thirty indexes were developed in the categories of (1) environmental conditions, (2) political system characteristics, and (3) policy outputs. Data from many published and unpublished sources were gathered. Zero-order correlations, partial correlations, and standardized regression coefficients were computed to estimate the relative influence of State governmental structure on education policy. Although the statistical treatment has not been completed, it should contribute to a knowledge of structure and policy relationships and give focus to subsequent research. (Author)

ED 077101

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

# STATE GOVERNMENTAL STRUCTURE AND EDUCATION POLICY DECISIONS: A STATISTICAL EXPLORATION

By

Tim L. Mazzoni Jr.
University of Minnesota

Roald F. Campbell
Ohio State University

Directors
Educational Governance Project

With the assistance of:

Edward R. Hines
Chase Crawford
Joseph Prusan

Research Associates
Educational Governance Project

Prepared for presentation at the 1973 annual meeting of the American Educational Research Association, New Orleans, Louisiana, March 1, 1973

EA 005 001

FILMED FROM BEST AVAILABLE COPY

# STATE GOVERNMENTAL STRUCTURE AND EDUCATION POLICY DECISIONS

## Purpose

That the way government is organized makes a crucial difference for the substance of its policy decisions has always been a basic tenet of American political philosophers and civic reformers. Yet empirical investigation of the actual effects of governmental structure remains largely to be done. This lack of knowledge is most obvious when a proposal calling for a major alteration in government is being considered. All sorts of speculative "reasons" usually can be advanced for supporting or opposing any such proposal. Rarely, however, are research findings available to suggest the nature and extent of the policy change to be anticipated from the proposed structural modification.

Our paper presents the findings of a statistical inquiry into the governmental structure correlates of state education policy, an inquiry undertaken by the staff of the Educational Governance Project.[1] Although the principal research effort of the project utilizes a comparative case study methodology directed toward twelve American states, a correlational analysis involving all fifty states was undertaken prior to the case studies. Its purpose was to detect significant relationships between state governmental structure and education policy decisions, relationships that could then be taken into account in selecting the states to receive detailed case investigation.

We were confronted with the question of which of the many variations in state government, and in what combination, should be represented in the case studies. Existing research was not very illuminating. There is not much of it, and what there is reflects a concern with only a narrow range of policy outputs and governmental arrangements.[2] Given this situation, we adopted the recommendation put forward by Jacob and Lipsky. "Significant variables", they argue,

"may be isolated by quantitative techniques, while the case method may be employed to approach greater understanding of the appearance of significant correlations."[3]

Our approach, then, consisted of using statistical techniques as a device to search for significant relationships between structure and policy, with the expectation that the results would help us in the process of state selection. Specifically, we sought to obtain quantitative evidence relative to these questions:

1. What features of state governmental structure make a difference for education policy decisions?

2. How much and what kind of difference do the structural features make for these policy decisions?

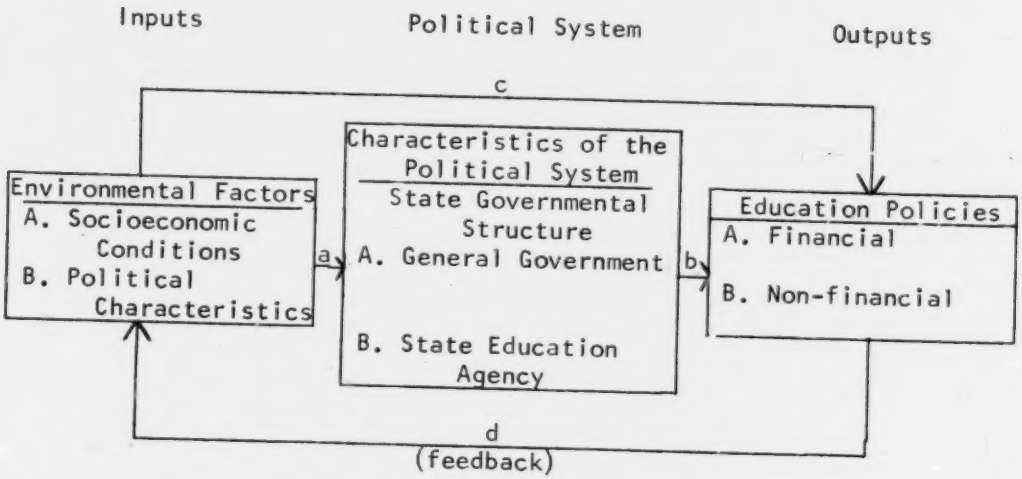
Despite the statistical exploration being something of a disappointment as an aid in deciding upon the case study states, it did uncover some relationships of interest and it cast doubt upon others that are usually presumed to exist. These findings, along with our procedures, are the subject of this presentation.

## Model and Analytic Approach

A simplified political systems model of the policy process served as the orienting framework for data gathering and the correlational analysis.[4] In the model (see Figure 1) are indicated the classes of variables that were of interest to us as well as a number of possible causal linkages. The linkage that we most fully explored by statistical techniques was b, the independent effect of structure upon policy outputs. For us, education policy decisions constituted the dependent variables; features of state governmental structure were the independent variables; and environmental factors functioned

as the control variables.

Figure 1




## Data Collection and Measurement

Data were collected during the spring of 1972. Some were aggregate data, such as that drawn from the census, or from budget and expenditure information about the states. But we also examined many other sources. These included compilations of state statutes and regulations, official documents, research reports, published works on state government, and unpublished materials in the U. S. Office of Education and Education Commission of the States. In gathering the data, we attempted to ensure that it was all for the same time period. This could not always be done - for example, 1970 U. S. Census data were not available for all the socioeconomic measures. Still,we believe that comparable data as to base years were obtained.

The data supplied information for three classes of variables: (1) education policy decisions,(2) state governmental structure, and (3) environmental factors. Our procedures for operationalizing these variables

are discussed in the remainder of this section.

Education Policy Decisions

To begin with we defined a "policy decision" as an authoritative decision which establishes the goals and priorities governing subsequent choices. Such parameter-setting decisions announce, to borrow from Lasswell's classic dictum, "who gets what, when, how."[5] Therefore, state education policy decisions give authoritative direction to the allocation of valued education goods, such as school funds, instructional personnel, and curriculum innovations. It must be emphasized that to look at a policy decision, as defined here, is only to look at the initial stage of a policy response, the other stages being the implementation of the decision and the consequences of that implementation.[6]

State school finance policies have been frequently studied[7] and we included several of the conventional measures in our analysis. Existing quantitative works, however, have tended to focus on the level of revenues or expenditures as the policy output. This is a serious omission. As Jacob and Lipsky point out,

> the distribution of benefits or sanctions is perhaps the most significant output dimension for political scientists, since much of the conflict preceding adoption of a program is not about whether it should be embarked upon, but who will pay and who will benefit.[8]

The formulation of a valid index of the distribution of benefits and burdens in state school support has yet to be accomplished. We had to settle for the equalization scores developed by the National Educational Finance Project. These scores, according to Johns and Salmon, should be interpreted as "measuring the extent that state and local funds are being used to equalize the financial resources available for education in a state."[9]

Our final measure of school finance policy was intended to reflect the amount of control established by a state over the fiscal access of its local districts. The judgmental procedure used to operationalize this policy output was the same as that employed for non-financial education policies, and it will be discussed in that connection.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

A. Measures of Education Finance Policies (K-12)

1. Public School Expenditures - Public school revenue receipts per pupil in ADA (1970-1971 data)

2. Equalization of School Support Funds - Equalization scores based on the typology created by the National Educational Finance Project (1968-1969 data)

3. Financial Effort - Public school revenue receipts per pupil in ADA as a percentage of personal income (1970-1971 data)

4. State Support - Percent of revenue for public elementary and secondary schools derived from state sources (1970-1971 data)

5. State Control of Local Fiscal Access - Project staff index (1968-1969 data)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

It is hard to find a state study in which there has been an attempt to quantify non-financial education policy decisions.[10] No doubt this situation prevail's because of data and measurement problems. Certainly, outputs in most education policy areas are not going to be simply indexed from available statistical information. Difficulties notwithstanding, we were convinced that an effort had to be made to develop indices of non-financial education policies, even if these turned out to be very crude. Our strategy for operationalizing policy decisions of this type consisted of the following steps:

1. Considered non-financial education policy as falling into the usual content areas, such as curriculum or certification.

2. Identified within each policy area one or more dimensions in terms of which state-level activity could be measured.

3. Examined a variety of written materials for information on each of the policy dimensions.

4. Used the information so collected as the basis for giving states points or placing them into ordered categories on each dimension.*

5. Weighed and combined dimension scores so as to arrive at a summary measure for each policy area.

6. Treated the judgmental measures as interval-level scales for the purpose of statistical analysis.

Admittedly, the approach outlined above is far removed from methodological purity. It has, nonetheless, proved its utility in other comparative studies.[11] And it was the only way that we had to construct the measures necessary for a quantitative inquiry into the structural correlates of non-financial education policies. In any event, our indices for these policies are listed below:

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

B. Measures of Non-Financial Education Policies (K-12)

1. State Commitment to Evaluation and Planning for Education - Project staff index (1971-1972 data)

2. State Provisions for Teacher-School Board Collective Bargaining - Project staff index (1970-1971 data)

3. State Curriculum Regulation - Project staff index (1968-1970 data)

4. State Regulation of Certification - Project staff index 1969-1970 data)

5. State Services Through Enacted Legislation for Non-Public Schools - Project staff composite index (1971-1972 data)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

*Details on the dimensions and scoring procedures for variables operationalized by the project staff are given in Appendix A.

State Governmental Structure

Focal roles in state policy making are those that have the legal right to enact, enforce, or adjudicate decisions binding upon the residents of a state. Roles of this type customarily are termed "state offices". The number and arrangement of these offices; the rules defining their operations and relationships; the division of decision-making authority among them; and the formal selection and employment procedures for their incumbents - all these, taken together, comprise the "state governmental structure".

We relied for structural measures of the governor's office and the legislature upon existing indices constructed by political scientists and by the Citizens Conference on State Legislatures:[12]

- - - -

for all the states. Because of the paucity of quantifiable information, we had to make do with only one indicator of agency professionalism (salary of the chief state school officer) and a few measures of the fiscal and personnel resources commanded by state departments of education.

It is often claimed that the way in which individuals are recruited to the positions of state board member and chief state school officer, along with their positional relationships and linkages to the governor's office, makes an important difference for education policy making. Despite research findings that dispute this claim,[13] we did seek to measure both the recruitment arrangements for these school officials and their state governmental relationships. After considerable experimentation, we settled upon three somewhat different measures. One gives scores to states according to the direct citizen accountability found in their formal recruitment mechanisms for state board members and the chief state school officers. A second measures the strength of the institutional linkage between the governor's office and the state education agency. The third draws upon Sroufe's taxonomy of "State Recruitment Models."[14] It is composed of two dimensions: (1) elected - appointed state boards; and (2) dependent-independent chief state school officers. The result is a four-cell taxonomy by which the formal recruitment mechanisms of a state can be classified. (For the statistical analysis "dummy" variables were created for each cell - that is, we denoted whether a state was in, or not in, each cell by assigning a "1" in the first case and an "0" in the second.)[15]

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

B. Measures of State Education Agency Structure

State Department of Education

1. CSSO Salary - Salary of the Chief State School Officer (1972 data)

2. Professional Staff - Full-time professional staff in both central and regional offices of the State Department of Education (1972 data)

3. SDE Budget/Children - Total budget of the State Department of Education divided by the number of school-age children in the state (1971-1972 data)

4. Research Information Capability - Professional staff listed as being employed in Planning and Evaluation, and Research and Statistics in the State Department of Education (1968-1969 data)

5. State Support - Percentage of State Department of Education budget provided by state sources (1970 data)

State Board of Education/Chief State School Officer

6. Electoral Accountability - Project staff measure (1972 data)*

7. Linkage to Governor - Project staff measure (1972 data)*

8. Formal Recruitment - Sroufe's taxonomy of SBE/CSSO recruitment models (1970 data)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Environmental Factors

The predominant influence of the environment upon policy outputs has been a common finding in empirical studies of the American states. For some writers, socioeconomic development is the key determinant.[16] Other scholars have stressed the political culture of a state or region.[17] Regardless of whether the emphasis should be on socioeconomic or on political variables (and much here appears to depend on the kind of policy being explained) it is necessary to control for environmental factors in order to isolate the effects of state governmental structure on education policy decisions.

We drew heavily upon Hofferbert's work in choosing the socioeconomic variables.[18] His application of factor analytic techniques to longitudinal data produced two relatively stable dimensions - "Affluence" and "Industrialization". These dimensions constituted the basis for our summary measures of socioeconomic

*Scales for these measures were inadvertently reversed. Hence, low scores indicate high electoral accountability for number six and a strong linkage to the governor's office for number seven.

development. Besides these, we incorporated as discrete variables in our analysis eight measures that had particularly high loadings on one or the other of Hofferbert's factors.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

A. Measures of Socioeconomic Conditions

1. Education - Median school years completed of persons over 25 (1960 data)

2. Real Property - Estimated value of real property per capita (1966 data)

3. Personal Income - Personal income per capita (1970 data)

4. Telephones - Telephones per 1,000 population (1970 data)

5. "Affluence" - Composite developed by the project staff based on the factor identified by Hofferbert (1960-1970 data)

6. Manufacturing - Value added by manufacturer per capita (1968 data)

7. Foreign - Foreign and mixed parentage as a percent of total population (1960 data)

8. Population - Total population (1970 data)

9. Urbanization - Percent of population that lives in an urban place (1970 data)

10. "Industrialization" - Composite developed by the project staff based on the factor identified by Hofferbert (1960-1970 data)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Three political characteristics were included among the environmental factors. Of these, the usage and measurement of political culture especially warrant comment. This variable is based on Elazar's analysis of the migration patterns of the ethnic and religious groups who settled the United States. These patterns, in his estimation, largely determined the distribution in the American states of distinctive political subcultures.[19] For Elazar, there are three major political subcultures. The "moralistic" type emphasizes citizen involve-

ment, professional administration, innovative programs, and the intervention of government for the welfare of the community. By way of contrast, the orientation of a "traditionalistic" culture is toward elite rule, a limited bureaucracy, non-innovative approaches, and the use of government to uphold established patterns. And an "individualistic" culture stresses the political role of specialized professionals, an efficient bureaucracy, cautious innovation, and confining the activities of government to the minimum necessary to keep the economic marketplace in working order.[20] While no state completely embodies a single subculture, the closest approximation to the pure types are found in Minnesota (moralist), Mississippi (traditionalist), and Nevada (individualist).

Elazar maintains that a political culture classification is of greater utility than the traditional regional divisions in examining the policy behavior of the American states.[21] Sharkansky's scaling of Elazar's culture concept does permit its use in quantitative analysis.[22] And we decided to employ the Elazar-Sharkansky measure, rather than to use categorical variables to represent regional affiliations. The scale ranges from 1.0 (most traditionalist) to 9.0 (most moralist); intermediate scores are given to individualist states and to various cultural syntheses.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

B. Measures of Political Characteristics

1. Political Culture - Elazar's-Sharkansky's scale of political culture (1968 data)

2. Voter Turnout - Percentage of voting age population who voted in 1968 for Governor (1968 data)

3. Party Dominance - Ranney's index of inter-party competition (1970 data)*

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

*A high score indicates Democratic Party dominance; a low score indicates Republic Party dominance.

## Techniques of Statistical Analysis

The initial step in analyzing the data was to generate simple coefficients of correlation for each pair of variables. These are Pearson product-moment correlations. In computing them, all the measures were assumed to have the characteristics of an interval scale.[23] The matrix of simple correlations was then inspected in order to identify significant relationships between structure and policy variables, and to suggest which environmental factors were having an effect on these relationships. Although tests of statistical significance do not apply to our data as if it were a probability sample, they were interpreted in this study as indicators of relationships worthy of further attention.[24]

Partial correlation coefficients were computed for all the significant correlations involving state governmental structure and education policy. In each of these computations, the environment variables that seemed to be most closely associated with the particular policy decision being examined were held constant. Whether or not this partialling technique "washed out" the structure-policy correlation provided our test of the independence of these relationships.[25]

## Presentation of Findings

The findings of our study are set forth in two sections. In the first are presented the simple correlations among the education policy measures, and between these measures and those representing both governmental structure and environmental factors.* The results we obtained from partialling the environmental variables from the significant structure-policy correlations are contained in the second section. There also is included in that section some evidence that comes from regression equations. The general mode of presentation

*Other coefficients of simple correlation are found in Appendix B.

is quite straightforward, consisting of data tables accompanied by appropriate narrative. The latter is primarily descriptive, emphasizing or summarizing relationships shown in the tables.

## Simple Correlations

In Table I are reported the coefficients of simple correlation among the ten policy indices. An examination of these interrelationships reveals the multidimensional nature of state education policy. While most (67 percent) of the correlations are positive, only 11 of the 45 possible relationships are statistically significant. And in just two cases is that relationship of enough magnitude so that more than 25 percent of the variation in one measure can be attributed to variation in the other. By and large, then, there are not strong associations between the score a state receives on one policy dimension and its scores on most others. Public school expenditure does come close to being an exception, for it is significantly linked to four of the policy measures. Its correlation with financial effort (.48) is particularly to be noted in light of the widespread interest in that relationship. (But there is almost no association between expenditures and the NEFP equalization measure.)

The closest association (.68) among the policy outputs is between the index of school support equalization and the relative contribution to this support made by the state. To probe this association a bit, we computed a coefficient of partial correlation, controlling for a number of socioeconomic and political characteristics. The size of this partial coefficient (.58) suggests that the percentage of educational revenues derived from the state has a strong independent effect on the extent of equalization found in the distribution of school aid funds.

Finally, the correlations shown in Table I do not sustain the popular belief that increases in state aid to education, relative to local funds,

Table I

COEFFICIENTS OF SIMPLE CORRELATION
AMONG MEASURES OF STATE EDUCATION POLICY DECISIONS

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| Fiscal Policies | | | | | | | | | | |
| (1) Public School Expenditures | 1.00 | .04 | .48* | .04 | -.12 | .37* | .60* | .16 | -.26 | .37* |
| (2) Equalization of School Support Funds | .04 | 1.00 | .17 | .68* | .34* | .26 | -.04 | .11 | .10 | -.12 |
| (3) Financial Effort | .48* | .17 | 1.00 | .23 | -.05 | .17 | .07 | -.10 | -.33* | .04 |
| (4) School Support from State | .04 | .68* | .23 | 1.00 | .33* | .14 | -.15 | .16 | -.03 | -.21 |
| (5) Control of Local Fiscal Access | -.12 | .34* | -.05 | .33* | 1.00 | .12 | -.04 | .05 | .12 | -.20 |
| Non-Fiscal Policies | | | | | | | | | | |
| (6) State Commitment to Evaluation/Planning | .37* | .26 | .17 | .14 | .12 | 1.00 | .28* | .28* | .24 | -.15 |
| (7) State Provisions for Collective Bargaining | .60* | -.04 | .07 | -.15 | -.04 | .28* | 1.00 | .02 | -.07 | .43* |
| (8) State Curriculum Regulation | .16 | .11 | -.10 | .16 | .05 | .28* | .02 | 1.00 | -.03 | .20 |
| (9) State Certification Regulation | -.26 | .10 | -.33* | -.03 | .12 | .24 | -.07 | .03 | 1.00 | .10 |
| (10) State Services for Non-Public Schools | .37* | -.12 | .04 | -.21 | -.20 | -.15 | .43* | .20 | .10 | 1.00 |

*Significant at the .05 level.

inevitably lead to greater regulation of the public schools by state governments. True, there is a significant positive correlation (.33) between the amount of school support provided by the state and our index of state control of local fiscal access. But it is not very strong; only about 10 percent of the variation in state control of local fiscal access is accounted for by its association with the state support measure. More importantly, the support measure does not correlate significantly with any of the non-financial education policy variables. In short, there seems to be no consistent relationship between a state's share of public school outlays and the policy direction it exerts in such areas as curriculum, certification, collective bargaining, or evaluation and planning.[26]

We began our search for the structural features that make a policy difference in the data contained in Table 2. Even a cursory look at this table shows that we did not get off to a very promising start. Some 29 percent of the simple correlations are significant, but only nine of these are as high as .40. None of the structural variables really stands out in terms of its policy correlates, although one measure of state department capability (SDE Budget/Children) is significantly related to four of the five education finance measures. Governors' formal powers and the technical capability of legislatures have the two largest coefficients (.56 and .57) both with teacher bargaining policy. At the other extreme, the three indicators of SBE/CSSO recruitment and relationships have only a few significant correlations and these are quite weak.

As for policy outputs, state control of local fiscal access does not have a single sizable structural correlate, and three other output measures - equalization of funds, state support, and certification regulation - have only one association of significance with a structural measure. The policy decision having the largest number of such relationships are public school expenditures (9),

Table 2

COEFFICIENTS OF SIMPLE CORRELATION
BETWEEN STATE GOVERNMENTAL STRUCTURE VARIABLES AND EDUCATION
POLICY DECISION VARIABLES

| GOVERNMENTAL STRUCTURE VARIABLES | Financial Policies[a] (1) | (2) | (3) | (4) | (5) | Non-Financial Policies[b] (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| Governor | | | | | | | | | | |
| (1) Formal Powers | .42* | .11 | .01 | -.04 | -.03 | .08 | .56* | -.11 | .00 | .18 |
| Legislature | | | | | | | | | | |
| (2) Technical Capability | .34* | .02 | -.01 | -.05 | -.07 | .29* | .57* | .21 | .14 | .42* |
| (3) Professionalism | .35* | .01 | -.24 | .06 | -.19 | .09 | .32* | .28* | -.04 | .33* |
| State Department | | | | | | | | | | |
| (4) CSSO Salary | .50* | .09 | -.16 | .18 | -.09 | .28* | .26 | .35* | .00 | .32* |
| (5) Professional Staff | .23 | .06 | -.36* | .13 | -.03 | .05 | .12 | .44* | .05 | .26 |
| (6) SDE Budget/Children | .36* | .54* | .49* | .40* | .19 | .32* | .11 | -.10 | .01 | -.13 |
| (7) Research Information Capability | .38* | .10 | -.04 | .16 | -.01 | .10 | .32* | .29* | .04 | .39* |
| (8) Extent of State Support | .38* | .23 | -.04 | .24 | .07 | .32* | .34* | .06 | -.05 | .16 |
| State Board/Chief State School Officer | | | | | | | | | | |
| (9) Electoral Accountability | .21 | -.20 | -.03 | -.09 | -.09 | -.03 | .15 | .06 | -.33* | -.03 |
| (10) Linkage to Governor's Office | -.29* | .18 | -.05 | .19 | .12 | .08 | -.18 | -.15 | .22 | -.23 |
| (11) SBE/CSSO "Recruitment Models" | | | | | | | | | | |
| (a) Appointed SBE and Dependent CSSO | .36* | -.15 | .11 | -.09 | -.08 | -.14 | .23 | .02 | -.27 | .26 |
| (b) Appointed SBE and Independent CSSO | -.21 | -.13 | -.07 | -.17 | .00 | .01 | -.07 | .00 | .09 | -.13 |
| (c) Elected SBE and Dependent CSSO | -.14 | .14 | -.09 | .15 | .10 | .16 | -.09 | .00 | .15 | -.24 |
| (d) Elected SBE and Independent CSSO | -.07 | .15 | .09 | .22 | -.03 | -.04 | -.10 | -.24 | -.05 | -.07 |

[a] Financial Policies
(1) Public School Expenditures
(2) Equalization of School Support Funds
(3) Financial Effort
(4) Percentage of School Support Provided by State
(5) State Control of Local Fiscal Access

[b] Non-Financial Policies
(6) State Commitment to Evaluation/ Planning for K-12 Education.
(7) State Provisions for Collective Bargaining Between Professional Educators and Local School Districts
(8) State Curriculum Regulations
(9) State Certification Regulations
(10) State Services for Non-Public Schools

*Significant at the .05 level.

collective bargaining provisions (5), and non-public school services (4). These findings suggest that the impact of governmental structure on education policy making is not uniform; the impact depends on the type of policy being enacted. However, the gross distinction between financial and non-financial does not seem to explain this variance. And other patterns of relationships are not immediately apparent.

In Table 3 are reported the simple coefficients between environmental factors and education policy decisions. Significant relationships are somewhat more frequent (reaching 45 percent) and a good deal stronger (29 exceed .40) than the structure-policy correlations. Aside from voter turnout, all the environmental variables have four or more significant relationships with policy variables. Not much of a hint is given in these data about the relative importance of socioeconomic as opposed to political characteristics. Each is involved in about the same percentage of significant relationships, albeit the largest ones are associated with the socioeconomic measures.

The two policy outputs having the most, as well as the highest, correlations with environmental factors are public school expenditures (8 of the 13 coefficients are significant) and provisions for collective bargaining (10 of the 13 coefficients are significant). By way of contrast, equalization of funds, control of local fiscal access, and regulation of certification have almost no environmental correlates of any consequence. Like structural features, environmental factors apparently make a much greater difference in some education policy areas than they do in others. Yet, again, this difference seems unrelated to whether or not these policies are predominantly financial. Nor do socioeconomic characteristics vary significantly with only one type of education policy (e.g., financial) and political characteristics significantly only with another (e.g., non-financial). Such simple patterns are not to be read in these data.

Table 3

COEFFICIENTS OF SIMPLE CORRELATION
BETWEEN SOCIOECONOMIC/POLITICAL CHARACTERISTICS
AND EDUCATION POLICY DECISION VARIABLES

| | Financial Policies[a] | | | | | Non-Financial Policies[b] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| SOCIOECONOMIC CHARACTERISTICS | | | | | | | | | | |
| (1) Education | .44* | .01 | .32* | -.23 | -.10 | .48* | .42* | .01 | .03 | -.02 |
| (2) Value Real Property | .01 | -.37* | -.23 | -.50* | .03 | .07 | .33* | -.15 | .39* | .14 |
| (3) Telephones | -.11 | -.42* | -.54* | -.50* | -.05 | .01 | .05 | .12 | .28* | .11 |
| (4) Personal Income | .82* | -.05 | .04 | -.08 | -.13 | .43* | .67* | .21 | -.07 | .29* |
| (5) "Affluence" (Composite) | .26 | -.27* | -.08 | -.45* | -.06 | .34* | .40* | -.01 | .28* | .05 |
| (6) Value Manufacturing | .29 | -.17 | -.27* | -.14 | -.27* | -.07 | .21 | .17 | -.23 | .41* |
| (7) Foreign | .50* | -.23 | .03 | -.53* | -.24 | .08 | .64* | .08 | -.06 | .54* |
| (8) Population Size | .24 | -.02 | -.31* | -.02 | -.11 | .05 | .21 | .51* | .02 | .45* |
| (9) Urban Population | .38* | .03 | -.27* | .00 | .03 | .42* | .35* | .37* | .19 | .08 |
| (10) "Industrialization" (Composite ) | .39* | -.22 | -.41* | -.28* | -.24 | .10 | .40* | .33* | -.02 | .47* |
| POLITICAL CHARACTERISTICS | | | | | | | | | | |
| (11) Political Culture | .40* | -.16 | .27* | -.49* | -.16 | .22 | .58* | -.09 | -.12 | .32* |
| (12) Voter Turnout | .21 | -.07 | .23 | -.33* | .01 | .12 | .33* | -.06 | .06 | .16 |
| (13) Party Dominance | .38* | .21 | -.27* | .53* | .21 | -.08 | -.45* | .11 | .01 | -.43* |

[a]Financial Policies
(1) Public School Expenditures
(2) Equalization of School Support Funds
(3) Financial Effort
(4) Percentage of School Support Provided by State.
(5) State Control of Local Fiscal Access

*Significant at the .05 level.

[b]Non-Financial Policies
(6) State Commitment to Evaluation/Planning for K-12 Education
(7) State Provisions for Collective Bargaining Between Professional Educators and Local School Districts
(8) State Curriculum Regulations
(9) State Certification Regulation
(10) State Services for Non-Public Schools

Partial Correlations

To this point only simple correlations have been described. They summarize the extent to which education policy differences among the American states exhibit a linear association with facets of their governmental organization or their environment. Such correlations are suggestive, but they do not indicate whether either governmental or environmental factors, or both, are responsible for the policy differences. To provide evidence in this regard, we relied primarily on coefficients of partial correlation. These coefficients can be interpreted as the estimate of the linear correlation between two variables when one or more other variables are held constant.

Our procedure in calculating the partial coefficients was first to identify the environmental variables that had the largest simple correlations with each policy measure. We then partialled out these environmental variables, including at least one indicator of a political characteristic, from every significant correlation that the policy measure had with any structural feature. This gave us the partial coefficients presented in Table 4 and Table 5.

If the correlation between a structure variable and a policy variable is greatly reduced or eliminated by partialling, we take this as strong evidence, albeit not conclusive, against there being an independent association between the two variables. On the other hand, if the partial coefficient remains above the significance level, after taking into account what appear to be the major environmental influences, we accept this as support for the existence of an independent structure-policy relationship.

In Table 4 are the findings for education finance policies. We were not surprised that most of the simple correlations did not hold up. Still, we had not anticipated that all of those involving the governor and the legislature

Table 4

RELATIONSHIPS BETWEEN STATE GOVERNMENTAL STRUCTURE AND EDUCATION FINANCE POLICY DECISIONS (SIMPLE AND PARTIAL CORRELATIONS)

| POLICY DECISION VARIABLES | GOVERNMENTAL STRUCTURE CORRELATES | SIMPLE CORRELATION[a] | PARTIAL CORRELATION[b] |
|---|---|---|---|
| Public School Expenditures | Governor's Formal Powers | .42 | -.09 |
| | Legislature Technical Capability | .34 | -.13 |
| | Legislator Professionalism | .35 | -.08 |
| | CSSO Salary | .50 | .06 |
| | SDE Research Information Capability | .38 | .24 |
| | State Support for SDE | .38 | -.09 |
| | Appointed SBE/Dependent CSSO | .36 | .29* |
| | SDE Budget/Children | .36 | .43* |
| Equalization of School Support Funds | SDE Budget/Children | .54 | .43* |
| Financial Effort | Legislator Professionalism | -.25 | .00 |
| | SDE Budget/Children | .49 | .15 |
| | SDE Professional Staff | -.36 | .06 |
| Percentage of School Support Provided by State | SDE Budget/Children | .40 | .20 |

[a]These are Pearson product-moment correlations.

[b]These are fourth-order partial correlations.

*Significant at the .05 level.

would virtually disappear. Nor had we expected that a characteristic like SDE Budget/Children would have significant positive coefficients of moderate size (.43) with both the expenditure and equalization measures. Its correlation with financial effort, however, is substantially weakened by partialling. The only other partial correlation to approach significance is between an appointed SBE/dependent CSSO recruitment arrangement and the level of public school expenditures.

An examination of the partial coefficients for non-finance policies (see Table 5) discloses that only a few relationships survive our test. To be exact, there are only four. Two of these have the technical capability of the legislature as the structural variable, the policy area in one case is collective bargaining (correlation is .34); in the other it is non-public school services (correlation is .39). The size of the state department budget, relative to its clients, shows up again in a significant relationship, this time with the measure of state commitment to evaluation and planning. Also having a significant positive correlation (.33) with that policy measure is the degree to which the budget of the state department is funded by the state, rather than by the federal government.

Sizable correlations are not the only ones worthy of attention. It is equally instructive to notice those which are diminished as a consequence of partialling. In particular, the near absence of significant partial coefficients for our measures of state administrative arrangements casts doubt upon some assumptions and arguments that are widespread in the literature. First, there is the position, often implicit, that centralized executive authority is conducive to liberal policies; that a weak gubernatorial office works to the benefit of conservative forces.[27] If liberalism is reflected in higher educational expenditures, greater equalization in school funds, or stronger provisions for

Table 5

RELATIONSHIPS BETWEEN STATE GOVERNMENTAL STRUCTURE AND NON-FINANCIAL EDUCATION POLICY DECISIONS (SIMPLE AND PARTIAL CORRELATIONS)

| POLICY DECISION VARIABLES | GOVERNMENTAL STRUCTURE CORRELATES | SIMPLE CORRELATION[a] | PARTIAL CORRELATION[b] |
|---|---|---|---|
| State Commitment to Evaluation/Planning for K-12 Education | Legislative Technical Capability | .29 | .08 |
| | CSSO Salary | .28 | .20 |
| | State Support for SDE | .32 | .33* |
| | SDE Budget/Children | .32 | .29* |
| State Provisions for Collective Bargaining | Governor's Formal Powers | .56 | .27 |
| | Legislature Technical Capability | .57 | .34* |
| | Legislator Professionalism | .32 | .05 |
| | SDE Research Information Capability | .32 | .21 |
| | State Support for SDE | .34 | |
| State Curriculum Regulations | Legislator Professionalism | .28 | -.23 |
| | CSSO Salary | .35 | .03 |
| | SDE Professional Staff | .44 | .03 |
| | SDE Research Information Capability | .29 | .02 |
| State Certification Regulations | SBE/CSSO Electoral Accountability | -.33 | -.22 |
| State Services to Non-Public Schools | Legislative Technical Capability | .42 | .39* |
| | Legislator Professionalism | .33 | .12 |
| | CSSO Salary | .32 | .18 |
| | SDE Research Information Capability | .39 | .21 |

[a]These are Pearson product-moment correlations.
[b]These are fourth-order partial correlations.
*Significant at the .05 level.

collective bargaining, then our data do not support this position. Only collective bargaining is related to the governor's formal power at a level approaching significance once environmental factors have been controlled. These findings do not mean, of course, that the formal authority vested in the governor is unimportant for his programmatic influence. But they do call into question the assumption that such a lodgement of authority has any independent and consistent policy effect measurable on a liberal-conservative continuum.

Second, there is the debate over the kinds of institutional linkage that should be established between the governor's office and the state education agency, and between its state board of education and the chief state school officer.[28] We endeavored in various ways to quantify these relationships, three different measures being contained in our final analysis. Just two simple correlations of significance were found between any of our measures and any of the policy variables, one of which held up after partialling. This weak finding amidst the negative evidence does not impress us very much. And it is hardly encouraging for the expectation that changing these institutional linkages, at least within conventional limits, will have consequences for the substance of policy decisions.

Some Other Findings

We have not yet undertaken a full regression analysis of our data. Nevertheless, thirty regression equations were generated to obtain the partial correlations discussed in the last section.* And the statistics computed for these equations do provide a few clues as to the environmental and governmental factors which most influence state education policy decisions.

*See Appendix C for a representative selection of these equations.

First, the coefficients of multiple determination ($R^2$) indicate that our simplified political systems model probably cannot "explain" even half of the interstate policy variance in such education areas as certification, curriculum, and evaluation/planning. Undoubtedly, the inadequacy of our indices and errors in their measurement contribute to this unexplained variance. But it may also mean that there is considerable leeway for political leadership to shape policy in these areas. Even school finance decisions, other than those which set basic expenditure levels, do not appear to be determined in any controlling fashion by environmental conditions.

Second, the standardized regression coefficients (beta weights) can be used to assess the relative strength of the socioeconomic, political, and governmental structure variables in each equation.[29] Relationships suggested by their use are summarized in Table 6. Certainly, some of the other variables included in our data strongly influence education policy decisions. But those that are depicted in the table are the only ones that we can presently identify with any confidence, and even these relationships are put forward as hypotheses to be investigated with more appropriate statistical techniques as well as better data.

## Conclusions

Our basic purpose in the statistical exploration was to gather quantitative evidence relative to two questions:

1. What features of state governmental structure make a difference for education policy decisions?

2. How much and what kind of difference do the structural features make for these policy decisions?

With regard to question one, it would appear that many formal governmental

Table 6

SOME CORRELATES OF
STATE EDUCATION POLICY

| EDUCATION POLICY * DECISION | ENVIRONMENTAL AND STRUCTURAL CHARACTERISTICS Estimated Strength of Relationship** | | |
|---|---|---|---|
| | Very Strong | Strong | Moderate |
| Public School Expenditures | Personal Income per capita (+) | | SDE Budget/ Children (+) |
| Equalization of School Funds | | | SDE Budget/ Children (+) |
| Financial Effort | | Telephone per 1000 (-) | Median Education (+) |
| Collective Bargaining Provisions | | Personal Income per Capita (+) | Political Culture (+)<br>Technical Capability of Legislature (+) |
| Evaluation/ Planning Commitment | | Median Education (+) | SDE Budget/ Children (+)<br>State Support for SDE (+) |
| Curriculum Regulation | | | Population Size (+) |
| Services to Non-Public Schools | | | Technical Capability of Legislature (+)<br>Catholic Population (+)<br>Foreign (+) |

* No independent relationships of any magnitude have been identified for certification regulation or state control of local fiscal access. And percentage of school revenues derived from the state has not been subject as yet to regression analysis.

**Estimates are based primarily on the beta weights and "t" values for the independent variables in each equation.

characteristics do not have a significant independent relationship with any education policy variable. Moreover, the features that have such a relationship do not make a difference for more than a few kinds of policy decisions. Table 7 summarizes the instances where governmental structure seems to contribute to interstate variations in education policy, independent of the socioeconomic and political environment.

Table 7

SUMMARY OF
SIGNIFICANT PARTIAL CORRELATIONS BETWEEN
MEASURES OF STATE GOVERNMENTAL STRUCTURE
AND EDUCATION POLICY DECISIONS

| Governmental Structure Feature | Policy Decision Meaure | Partial Coefficients |
|---|---|---|
| SDE Budget/Children | Public School Expenditures | +.43 |
| | Equalization of School Funds | +.43 |
| | Commitment to Evaluation/Planning | +.29 |
| Technical Capability of Legislatures | Services to Non-Public Schools | +.39 |
| | Provisions for Collective Bargaining | +.34 |
| Appointed SBE/Dependent CSSO | Public School Expenditures | +.29 |
| State Support for SDE | Commitment to Evaluation/Planning | +.33 |

As for the second question, the direction of the significant partial correlations involving governmental structure is always positive, but their magnitudes are not large. When a really strong association with an education policy variable is indicated, the other variable in that association is always a socioeconomic characteristic. Political aspects of a state's environment, such as its political culture and electoral process, do not appear to have an

important effect on its education policy outputs. But this conclusion is somewhat weakened by the narrow range of political measures that we incorporated in our analysis.

All in all, there is little in these findings from which to argue that modifications in the formal structure and procedures of American state governments will result in any dramatic alterations in the substance of their education policy. Such policy is multidimensional; there is only a slight relationship between a state's ranking on one dimension and its ranking on most others. Furthermore, the governmental factors that seem to have an impact on education policy outputs vary across issues. Thus, we would expect that a structural modification, if it had an effect at all, would shape policy content in only one or two areas of education decision-making, and this influence would not be very large.

There has been much scholarly comment on the measurement and analysis problems inherent in the macro-correlational approach.[30] We would only emphasize here that the most basic limitation of this approach is in the area of interpretation. It can hardly have escaped notice that we have been able to do little to explain our findings. The reason for this is because we do not have empirical data, let alone established theory, to permit more than a few speculations. Statements to the effect that X relationship "may reflect" Y condition are pervasive in the literature, but we do not consider such statements as extending our knowledge. Statistical treatment of aggregate data can help identify relationships and assess their magnitude; it usually produces little insight into the "how" or "why" of these relationships.

Since the power of macro-correlational analysis is largely confined to the detection of gross relationships, it can only be the first stage of an investigation of structure-policy linkages rather than its culmination. The general

picture that is depicted in statistical relationships must be refined through intensive case studies. These are necessary to gain an understanding of how state governmental structure "works" (or is worked through) in the determination of education policy. We are currently engaged in doing such studies in a dozen states, and the comparative analysis of these data should result in research-based answers of the type that we cannot at present provide. Until that time, we are in the uncomfortable position of not having found out very much, and not being able to explain adequately what we have found.

FOOTNOTES

[1]This project is funded by the U. S. Office of Education under Section 505, Title V of ESEA. Its primary objective is to develop and appraise a number of alternative models for state educational governance, models that will have the policy-making structure of the State Education Agency as their focal point. Final reports from project will be forthcoming in June, 1974.

[2]Two good, albeit somewhat dated, surveys of this research are to be found in Herbert Jacob and Michael Lipsky, "Outputs, Structure, and Power: An Assessment of Changes in the Study of State and Local Politics" in Richard Hofferbert and Ira Sharkansky, eds., State and Urban Politics (Boston: Little, Brown and Co., 1971), pp. 14-40; and John Fenton and Donald Chamberlayne, "The Literature Dealing with the Relationships Between Political Processes, Socioeconomic Conditions and Public Policies in the American States: A Bibliographical Essay", Polity, 1 (Spring, 1969), pp. 388-404.

[3]Jacob and Lipsky, "Outputs, Structure, and Powers", P. 33.

[4]As Grumm notes, studies of the effects of structural features on policy always rest on some sort of simplified political systems model. John Grumm, "The Effects of Legislative Structure on Legislative Performance", in Hofferbert and Sharkansky, eds., State and Urban Politics, pp. 298-300.

[5]Harold Lasswell, Politics: Who Gets What, When, How (New York: McGraw-Hill, 1936).

[6]On this point, see Randall B. Ripley, et al., "Policy-Making: A Conceptual Scheme", American Politics, 1(January, 1973), p. 8.

[7]See, for example, Warner S. Hirsch, The Economics of State and Local Government (New York: McGraw-Hill, 1970); Jerry Miner, Social and Economic Factors in Spending for Public Education (Syracuse: Syracuse University Press, 1963) and Walter W. McMahon, "An Economic Analysis of Major Determinants of Expenditures on Public Education", Review of Economics and Statistics, 52(August, 1970).

[8]Jacob and Lipsky, "Outputs, Structure, and Power", p. 19.

[9]Roe L. Johns and Richard G. Salmon, "The Financial Equalization of Public School Support Programs in the United States for the School Year 1968-69", in Roe L. Johns, et al., eds., Status and Impact of Educational Finance Programs (Gainesville, Florida: National Educational Finance Project, 1971), p. 136.

[10]An exception is Harmon Zeigler and Karl F. Johnson, The Politics of Education in the States (New York: Bobbs-Merrill, 1972).

[11]For a particularly sophisticated use of this approach towards operationalizing variables, see Ted R. Gurr and Muriel McClelland, Political Performance: A Twelve Nation Study (Beverly Hills; Sage, 1971).

[12]A discussion of Schlesinger's index of governors' formal powers is contained in Joseph A. Schlesinger, "The Politics of the Executive", in Herbert Jacob and Kenneth N. Vines, eds., Politics in the American States (Boston: Little, Brown and Co., 1971), pp. 222-232. The summary measure of the technical capability of state legislatures is described in The Citizens Conference on State Legislatures, State Legislatures: An Evaluation of Their Effectiveness (New York: Praeger, 1971), pp. 3-54.

The dimensions of Grumm's index of legislative professionalism are presented in Grumm, "The Effects of Legislative Structure on Legislative Performance," pp. 315-317.

[13]Gerald E. Sroufe,"An Examination of the Relationship Between Methods of Selection and the Characteristics and Self-Role Expectations of State School Board Members" (Unpublished Ph.D. dissertation, University of Chicago, 1970).

[14]Ibid., pp. 30-37.

[15]It should be noted that the maximum size, according to Nunnally, of a simple correlation coefficient between any dichotomous variable and a normally distributed variable is "about .80". Jum C. Nunnally, Psychometric Theory (New York: McGraw-Hill, 1967), p. 132.

[16]The most influential of the studies emphasizing economic factors has been Thomas R. Dye, Politics, Economics, and the Public (Chicago: Rand McNally, 1966).

[17]The best analysis of regional differences is in Ira Sharkansky, Regionalism in American Politics (Indianapolis: Bobbs-Merrill, 1970).

[18]Richard I. Hofferbert, "Socioeconomic Dimensions of the American States: 1890-1960", Midwest Journal of Political Science, 12(August, 1968), 401-418.

[19]Daniel J. Elazar, American Federalism: A View from the States (New York: Thomas Cromwell, 1966), Chapter IV.

[20]Ibid.

[21]Ibid., p. 114.

[22]Ira Sharkansky, "The Utility of Elazar's Political Culture: A Research Note," Polity 2(1969).

[23]The rationale for this approach towards scaling is well stated in Nunnally, Psychometric Theory Chapter I. Also see Robert P. Abelson and John W. Tukey, "Efficient Conversion of Non-Metric Information into Metric Information", Proceedings of the Social Statistics Section of the American Statistical Association (Washington, 1959),pp. 226-230.

[24]We have no intention of becoming involved in the "tests of significance controversy" regarding their applicability to studies of entire populations (e.g., the fifty American states). We agree with Winch and Campbell that these tests "provide a relevant and useful way of assessing the relative likelihood that a real difference exists and is worthy of interpretive attention, as opposed to the hypothesis that the set of data could be a haphazard arrangement." R. Winch and D. Campbell, "Proof? No. Evidence? Yes. The Significance of Tests of Significance," American Sociologist 4(May, 1969), pp. 140-143.

[25]On this technique, see Hubert Blalock, Social Statistics (New York: McGraw-Hill, 1960), Chapter 19.

[26]This finding is consistent with those reached in studies undertaken by the Urban Institute. Betsy Levin, et al., "Public School Finance: Present Disparities and Fiscal Alternatives" (Unpublished paper prepared by the Urban Institute, July 1972).

[27]On this point also see Thomas R. Dye, "Executive Power and Public Policy in the States," The Western Political Quarterly, 22(1969), pp. 926-939.

[28]Many of the arguments in this debate are summarized in Kenneth Hansen, "State Organization for Education" in Emerging State Responsibilities for Education (Denver: Improving State Leadership in Education, 1970).

[29]The use and limitations of standardized regression coefficients (Beta weight) as measures to compare the relative influence of the independent variables in a regression equation are well illustrated in the latest reanalyses of the "Coleman data". See particularly the articles by Jencks, Armour, and Smith in Frederick Mosteller and Daniel P. Moynihan, eds., On Equality of Educational Opportunity (New York: Vintage Books, 1972).

[30]For some recent summary judgments, see M. Margaret Conway and Frank B. Feigert, Political Analysis: An Introduction (Boston: Allyn and Bacon, 1972), pp.249-257; and Herbert Jacob and Kenneth N. Vines, "Epilogue", in Jacob and Vines, eds., Politics in the American States, pp. 556-562.

# APPENDIX A

## MEASURES OF NON-FINANCIAL EDUCATION POLICIES (K-12)

Our general scoring procedure for each of the five non-financial education policy decisions is indicated below:

1. STATE COMMITMENT TO EVALUATION/PLANNING FOR EDUCATION

Four dimensions of evaluation/planning were identified and scored from information gathered on state legislation, and SEA goal statements and policy directives:

1. Evaluation*

| Score | Statutory Provisions and SEA Actions |
|---|---|
| 4 points | if state has legislation, SEA goal statements, and SEA activity |
| 3 points | if state has only legislation and SEA activity |
| 2 points | if state has only SEA goal statements and SEA activity |
| 1 point | if state has only SEA activity |
| 0 point | if state has neither legislation, nor SEA activity |

2. Planning

| Score | Statutory Provisions and SEA Actions |
|---|---|
| 4 points | if state has legislation, and SEA has taken action |
| 2 points | if state has no legislation, but SEA has taken action |
| 0 points | if state has neither legislation, nor has SEA taken action |

3. Language Specificity

| Score | Specificity of Legislation or SEA Statements |
|---|---|
| 2 points | if state has language in its legislation or SEA statements that is specific |
| 0 points | if state does not have language in its legislation or SEA statements that is specific |

4. Monetary Appropriations

| Score | Specific Monetary Appropriation |
|---|---|
| 3 points | if state has appropriated specific monies for either evaluation or planning |
| 0 points | if state takes evaluation or planning action (i.e., legislation, goal statements, or directives ) but has not appropriated specific monies. |

*Includes "Accountability", "Needs Assessment", "Information Systems", and PPBS

- - - -

## II. STATE PROVISIONS FOR TEACHER-SCHOOL BOARD COLLECTIVE BARGAINING

Three dimensions of collective bargaining (negotiations) were identified and scored from information gathered on state legislation, state administrative or court decisions, and on state-level teacher association (or union) activity:

### 1. Legal Status

| Score | State Authorization |
|---|---|
| 3 points | if state has statutory collective bargaining |
| 2 points | if state has collective bargaining because of a decision by the attorney general |
| 1 point | if state has collective bargaining because of a court decision |
| 0 point | if state does not have collective bargaining |

### 2. Characteristics

| Score | Characteristics of Collective Bargaining Agreement |
|---|---|
| Variable points | depending on the labor orientation of a state's provisions in each of these areas:<br>a. Scope of bargaining rights<br>b. Bargaining impasse procedures<br>c. Grievance procedures<br>d. Strike provisions |

### 3. Activity

| Score | Amount of Teacher Association (Union) Activity |
|---|---|
| 4 points | if state has a high level of activity |
| 3 points | if state has a moderate to high level of activity |
| 2 points | if state has a moderate level of activity |
| 1 point | if state has a low level of activity |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

## III. STATE CURRICULUM REGULATION

Three dimensions of curriculum regulation were identified and scored from information gathered on state legislation, and SEA policy directives or guidelines:

### 1. Enacted Legislation

| Score | State Legislation |
|---|---|
| 3 points | if state has laws in each of 24 curricular areas |

2. SEA Activity

| Score | SEA Activity |
|---|---|
| 2 points | if there are SEA directives or guidelines in each of 24 curricular areas |

3. Proposed Legislation

| Score | Proposed State Legislation |
|---|---|
| 1 point | if there are proposed state laws in each of 24 curricular areas |

The 24 curricular areas were:

1. Art Programs
2. Bilingual Education
3. Communication - Oral Language
4. Consumer Education
5. Curriculum Centers
6. Diagnostic and Prescriptive Teaching
7. Differentiated Staffing
8. Drug Education
9. Early Childhood Education
10. Educational Television
11. Environmental Education
12. Exceptional Children
13. Extended School Year
14. Health Education
15. Individualized Instruction
16. Innovative Practices
17. Intergroup Education
18. Reading and Mathematics
19. Safety Education
20. Science
21. Social Studies - Humanities
22. Special Education
23. Textbooks and Materials
24. Vocational Education

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

IV. STATE REGULATION OF CERTIFICATION

Two dimensions of certification regulation were identified and scored from information on state legislation, and SEA policy directives or guidelines.

1. Legal Requirements

| Score | Legal Requirements for Certification |
|---|---|
| 1 point | for state provisions in each of these areas: |

(a) U.S. Citizenship
(b) Loyalty Oath
(c) Minimum Age

(d) Fee
(e) Health Certificate
(f) Validation of Out-of-State Certificates

2. Procedures

Score — Professional Certification Procedures

Variable points depending on state provisions in each of these areas:

(a) Certificates for different professional classifications
(b) Certification of private and/or parochial school personnel
(c) Requirements for general education and/or professional courses
(d) Use of N.T.E. scores for regular certification
(e) Review of transcripts of candidates by SDE
(f) Institutional recommendation of candidates

---

V. STATE SERVICE THROUGH ENACTED LEGISLATION FOR NON-PUBLIC SCHOOLS

This variable was scored from information gathered on state legislation:

Score — State Legislation

1 point for enacted legislation in each of the following 19 areas:

(a) Transportation
(b) Services for disadvantaged/handicapped/or exceptional child
(c) Instructional materials/textbooks
(d) Per pupil aid
(e) Driver education
(f) Health and welfare
(g) Leasing of non-public facilities
(h) Leasing of public school facilities
(i) Dual enrollment
(j) Grants to low income families
(k) School lunch
(l) Testing services
(m) Innovative programs
(n) Central purchasing
(o) Released time
(p) Vocational education
(q) Teacher retirement
(r) Sales tax exemption
(s) Rural educational opportunities

---

APPENDIX B1

COEFFICIENTS OF SIMPLE CORRELATION
AMONG THE ENVIRONMENTAL VARIABLES

| | SOCIOECONOMIC | | | | | | | | | | POLITICAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| SOCIOECONOMIC CHARACTERISTICS | | | | | | | | | | | | | |
| (1) Education | 1.00 | .43 | .57 | .18 | .80 | -.15 | .38 | -.02 | .42 | .03 | .67 | .50 | -.58 |
| (2) Value Real Property | | 1.00 | .26 | .49 | .81 | -.19 | .29 | -.02 | .16 | .04 | .41 | .40 | -.42 |
| (3) Personal Income | | | 1.00 | .15 | .54 | .36 | .51 | .39 | .69 | .58 | .38 | .17 | -.33 |
| (4) Telephone per 1000 | | | | 1.00 | .60 | .15 | .19 | .32 | .27 | .37 | .10 | .11 | -.16 |
| (5) "Affluence" (Composite) | | | | | 1.00 | -.11 | .38 | .08 | .44 | .16 | .55 | .46 | -.52 |
| (6) Value Manufacturing | | | | | | 1.00 | .27 | .44 | .25 | .82 | .06 | .01 | -.12 |
| (7) Foreign | | | | | | | 1.00 | .23 | .34 | .55 | .75 | .50 | -.62 |
| (8) Population Size | | | | | | | | 1.00 | .50 | .64 | -.03 | -.21 | .01 |
| (9) Urban Population | | | | | | | | | 1.00 | .61 | .16 | -.03 | -.02 |
| (10) "Industrialization" (Composite) | | | | | | | | | | 1.00 | .17 | .02 | -.14 |
| POLITICAL CHARACTERISTICS | | | | | | | | | | | | | |
| (11) Political Culture | | | | | | | | | | | 1.00 | .64 | -.81 |
| (12) Voter Turnout | | | | | | | | | | | | 1.00 | -.67 |
| (13) Party Dominance | | | | | | | | | | | | | 1.00 |

APPENDIX B2

COEFFICIENTS OF SIMPLE CORRELATION
AMONG MEASURES OF STATE GOVERNMENTAL STRUCTURE

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | 11 (a) | 11 (b) | 11 (c) | 11 (d) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Governor | | | | | | | | | | | | | | |
| (1) Formal Powers | 1.00 | .39 | .30 | .24 | .21 | .10 | .34 | .37 | .12 | -.10 | -.01 | .10 | .02 | -.09 |
| Legislature | | | | | | | | | | | | | | |
| (2) Technical Capability | .39 | 1.00 | .50 | .32 | .26 | -.07 | .32 | .36 | -.12 | .08 | -.02 | -.17 | .11 | -.11 |
| (3) Professionalism | .30 | .50 | 1.00 | .61 | .68 | -.18 | .58 | .42 | -.07 | .02 | .13 | -.17 | -.09 | .01 |
| State Department | | | | | | | | | | | | | | |
| (4) Salary of Chief State School Officer | .24 | .32 | .61 | 1.00 | .57 | .02 | .53 | .45 | .34 | -.14 | .31 | -.34 | .10 | -.04 |
| (5) Size of Professional Staff | .21 | .26 | .68 | .57 | 1.00 | -.21 | .68 | .43 | .12 | -.12 | .01 | .07 | -.14 | -.04 |
| (6) SDE Budget/ Chilcren | .10 | -.07 | -.18 | .02 | .21 | 1.00 | -.09 | .23 | .06 | -.12 | .14 | -.06 | -.01 | -.08 |
| (7) Research Information Capability | .34 | .32 | .58 | .53 | .68 | -.09 | 1.00 | .43 | .15 | -.01 | .15 | -.07 | -.02 | .00 |
| (8) Extent of State Support | .37 | .36 | .42 | .45 | .43 | .23 | .43 | 1.00 | .16 | -.22 | -.02 | .11 | -.17 | .07 |
| State Board/Chief State School Officer | | | | | | | | | | | | | | |
| (9) Electoral Accountability | .12 | -.12 | -.07 | .34 | .12 | .06 | .15 | .16 | 1.00 | -.56 | .56 | -.15 | .03 | -.28 |
| (10) Linkage to Governor's Office | -.10 | .08 | .02 | -.14 | -.12 | -.12 | -.01 | -.22 | -.56 | 1.00 | -.50 | -.16 | .54 | .45 |
| (11) SBE/CSSO "Recruitment Model" | | | | | | | | | | | | | | |
| (a) Appointed SBE and Dependent CSSO | -.01 | -.02 | .13 | .31 | .01 | .14 | .15 | -.02 | .56 | -.50 | 1.00 | -.47 | -.35 | -.17 |
| (b) Appointed SBE and Independent CSSO | .10 | -.17 | -.17 | -.34 | .07 | -.06 | -.07 | .11 | -.15 | -.16 | -.47 | 1.00 | -.38 | -.18 |
| (c) Elected SBE and Dependent CSSO | .02 | .11 | -.09 | .10 | -.14 | -.01 | -.02 | -.17 | .03 | .54 | -.35 | -.38 | 1.00 | -.13 |
| (d) Elected SBE and Independent CSSO | -.09 | -.11 | .01 | -.04 | -.04 | -.08 | .00 | .07 | -.28 | .45 | -.17 | -.18 | -.13 | 1.00 |

APPENDIX B3

COEFFICIENTS OF SIMPLE CORRELATION
BETWEEN STATE GOVERNMENTAL STRUCTURE VARIABLES AND VARIABLES
REPRESENTING SOCIOECONOMIC AND POLITICAL CHARACTERISTICS

| GOVERNMENTAL STRUCTURE VARIABLES | Socioeconomic Characteristics[a] | | | | | | | | | | Political Characteristics[b] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| Governor | | | | | | | | | | | | | |
| (1) Formal Powers | .31 | .17 | .00 | .52 | .26 | .16 | .34 | .31 | .41 | .29 | .36 | .35 | -.28 |
| Legislature | | | | | | | | | | | | | |
| (2) Technical Capability | .36 | .36 | .17 | .46 | .38 | .00 | .31 | .47 | .40 | .22 | .39 | .09 | -.30 |
| (3) Professionalism | .02 | -.06 | .20 | .46 | .04 | .30 | 32 | .77 | .50 | .56 | .00 | -.27 | .12 |
| State Department | | | | | | | | | | | | | |
| (4) CSSO Salary | -.01 | .23 | .04 | .59 | -.05 | .47 | .21 | .56 | .54 | .62 | -.08 | -.20 | .09 |
| (5) Professional Staff | -.27 | -.17 | .23 | .29 | -.14 | .37 | .18 | .79 | .43 | .60 | -.21 | -.28 | .18 |
| (6) SDE Budget/ Children | .28 | -.10 | -.42 | .20 | .03 | -.41 | -.05 | -.36 | -.10 | -.38 | .04 | .15 | -.08 |
| (7) Research Information Capability | -.07 | -.19 | .10 | .30 | -.10 | .22 | .23 | .62 | .29 | .34 | .03 | -.17 | -.04 |
| (8) Extent of State Support | -.02 | -.05 | -.01 | .42 | -.02 | .17 | .04 | .35 | .23 | .27 | -.07 | -.27 | .06 |
| State Board/Chief State School Officer | | | | | | | | | | | | | |
| (9) Electoral Accountability | -.03 | -.21 | -.11 | .22 | -.13 | .25 | .16 | -.05 | .02 | .24 | .03 | .00 | -.04 |
| (10) Linkage to Governor's Office | .09 | .12 | .08 | -.17 | .10 | -.22 | -.18 | .01 | .09 | -.27 | .07 | -.02 | .08 |
| (11) SBE/CSSO "Recruitment Models" | | | | | | | | | | | | | |
| (a) Appointed SBE and Dependent CSSO | .00 | -.15 | -.01 | .25 | -.09 | .24 | .33 | -.11 | -.10 | .22 | .15 | .22 | -.11 |
| (b) Appointed SBE and Independent CSSO | -.10 | .11 | .17 | -.19 | .07 | -.13 | -.09 | .06 | -.15 | -.06 | -.08 | -.01 | -.07 |
| (c) Elected SBE and Dependent CSSO | .29 | .13 | -.15 | .06 | .20 | -.17 | -.17 | -.01 | .28 | -.18 | -.07 | -.03 | -.02 |
| (d) Elected SBE and Independent CSSO | -.17 | -.18 | -.13 | -.16 | -.22 | .02 | -.16 | -.05 | -.06 | -.08 | -.12 | .29 | .30 |

[a] Socioeconomic Characteristics
(1) Median Education
(2) Value of Real Property
(3) Telephones per 1,000
(4) Personal Income per Capita
(5) "Affluence" (composite)
(6) Value by Manufacturing
(7) Foreign
(8) Population Size
(9) Urban Population
(10) "Industrialization" (composite)

[b] Political Characteristics
(11) Political Culture
(12) Voter Turnout
(13) Party Dominance

APPENDIX CI
Regression Equations

| Dependent Variables | Independent Variables | Values of "t" Statistic | Beta Weights |
|---|---|---|---|
| Expenditures | Education | .15 | -.17 |
| | Income | 6.43* | .88 |
| F-Ratio 20.08 | Foreign | .08 | -.01 |
| | Political Culture | 1.14 | .21 |
| $R^2$ 70% | Governor's Formal Powers | .59 | -.06 |
| Expenditures | Education | 1.13 | -.17 |
| | Income | 6.82* | .88 |
| F-Ratio 20.37 | Foreign | .14 | -.02 |
| | Political Culture | 1.23 | .23 |
| $R^2$ 70% | Technical Capability of Legislature | .90 | -.09 |
| Expenditures | Education | 1.82 | -.24 |
| | Income | 7.31* | .81 |
| F-Ratio 26.26 | Foreign | .26 | .04 |
| | Political Culture | 1.35 | .22 |
| $R^2$ 75% | SDE Budget/Children | 3.14* | .25 |
| Equalization | Real Property | 1.24 | -.26 |
| | Telephone per 1000 | .49 | -.10 |
| F-Ratio 5.73 | "Affluence" | .07 | .02 |
| | Political Culture | .42 | -.07 |
| $R^2$ 39% | SDE Budget/Children | 3.19* | .47 |
| Financial Effort | Education | 2.13* | .31 |
| | Telephones per 1000 | 4.42* | -.51 |
| F-Ratio 9.52 | Industrialization | 1.81 | -.25 |
| | Political Culture | 1.07 | .16 |
| $R^2$ 52% | Legislative Professionalism | .03 | -.003 |
| Financial Effort | Education | 1.51 | .24 |
| | Telephones per 1000 | 3.60* | -.45 |
| F-Ratio 9.96 | "Industrialization" | 1.93 | -.23 |
| | Political Culture | 1.30 | .19 |
| $R^2$ 53% | SBE Budget/Children | 1.03 | .14 |
| Evaluation/ Planning Policy | Education | 2.61* | .55 |
| | Income | .04 | -.07 |
| | Urban Population | .09 | .11 |
| F-Ratio 4.28 | Political Culture | .10 | -.12 |
| | CSSO Salary | .20 | .29 |
| $R^2$ 33% | | | |
| Evaluation/ Planning Policy | Education | 2.75* | .52 |
| | Income | .53 | -.11 |
| | Urban Population | 1.28 | .22 |
| F-Ratio 5.23 | Political Culture | .59 | -.10 |
| | State Support for SDE | 2.29* | .32 |
| $R^2$ 37% | | | |

APPENDIX C 1 CONT'D

| | | | |
|---|---|---|---|
| Evaluation/ Planning Policy | Education | 1.38 | .28 |
| | Income | .03 | -.01 |
| | Urban Population | 1.8 | .34 |
| F-Ratio 4.86 | Political Culture | .16 | -.03 |
| | SDE Budget/Children | 1.98 | .28 |
| $R^2$ 36% | | | |
| Collective Bargaining Policy | Education | 1.28 | -.20 |
| | Income | 3.15* | .47 |
| | Foreign | .72 | .12 |
| F-Ratio 15.56 | Political Culture | 1.88 | .33 |
| | Governor's Formal Powers | 1.88 | .21 |
| $R^2$ 64% | | | |
| Collective Bargaining Policy | Education | 1.45 | -.23 |
| | Income | 3.42* | .47 |
| | Foreign | .82 | .14 |
| F-Ratio 16.61 | Political Culture | 1.81 | .35 |
| | Technical Capability of Legislature | 2.36* | .28 |
| $R^2$ 65% | | | |
| Collective Bargaining Policy | Education | 1.89 | -.32 |
| | Income | 4.11 | .72 |
| | Foreign | .52 | .09 |
| F-Ratio 14.43 | Political Culture | 2.23* | .45 |
| | CSSO Salary | 1.15 | -.10 |
| $R^2$ 62% | | | |
| Curriculum | Income | .62 | -.10 |
| | Population Size | 1.80 | Not computed |
| F-Ratio 3.66 | Urban Population | 1.19 | .22 |
| | Political Culture | .78 | -.10 |
| $R^2$ 29% | SDE Staff | .20 | .04 |
| Curriculum | Income | .33 | -.07 |
| | Population Size | 3.26* | Not computed |
| F-Ratio 4.36 | Urban Population | 1.33 | .24 |
| | Political Culture | 1.05 | -.00 |
| $R^2$ 33% | Legislative Professionalism | 1.59 | -.32 |
| Non-Public Services Policy | Income | 1.84 | -.28 |
| | Foreign | 1.68 | .25 |
| | Catholic Population | 2.02* | .33 |
| F-Ratio 8.35 | "Industrialization" | 1.2 | .19 |
| | Technical Capability of Legislature | 2.77* | .35 |
| $R^2$ 49% | | | |
| Non-Public Services Policy | Income | 1.25 | -.21 |
| | Foreign | 2.17* | .37 |
| | Catholic Population | 1.86 | .33 |
| F-Ration 6.27 | "Industrialization" | .25 | .05 |
| | CSSO Salary | 1.18 | .21 |
| $R^2$ 42% | | | |